

Klamath River Benthic Algae Monitoring Iron Gate Dam to Turwar: 2004

By

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Abstract

Benthic algae samples were collected at 15 Klamath River locations from Iron Gate Dam to Turwar in July, August, and September 2004. The Yurok Tribe Environmental Program collected samples in all three months; the North Coast Regional Water Quality Control Board collected samples in July; Watercourse Engineering, Inc. collected samples in August on behalf of PacifiCorp; and MaxDepth Aquatics collected samples in September under contract to US EPA. Uniform sampling and analytical methods were employed for this cooperative study, and Aquatic Analysts conducted all laboratory analyses. Benthic algae samples were collected in each month from three rocks at each sample location, and were analyzed for algal speciation, enumeration (i.e. density and biovolume), and biomass (i.e. AFDM, Chlorophyll a & Pheophyton a). Each sample location was characterized by having similar microhabitat conditions (e.g. 1 – 2 ft depth, 1 – 2 ft/sec velocity, and minimal topographic and riparian shade).

Results were variable, but support a common theme of complex and dynamic temporal and longitudinal distribution of benthic algae in the Klamath River from Iron Gate Dam to Turwar. When sorted by percentage density from each site, six species appeared more frequently than others (>20%), including *Cymbella affinis*, *Cocconeis placentula*, *Diatoma vulgare*, *Epithemia sorex*, *Navicula cryptocephala veneta*, and *Nitzschia frustulum*. These dominant algal species indicate spatial and temporal variation, expressed as longitudinal segregation and seasonal progressions/transitions. These variations appear to be in response to environmental factors including nutrient concentrations, flow regime, disturbance, and other factors such as light availability, grazing, competition, and water temperature.